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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,390	05/18/2005	Nigel Paul Schofield	M02B151	4420
71134	7590	02/01/2010		EXAMINER
Edwards Vacuum, Inc. 2041 MISSION COLLEGE BOULEVARD SUITE 260 SANTA CLARA, CA 95054			FAYYAZ, NASHMIYA SAQIB	
			ART UNIT	PAPER NUMBER
			2856	
NOTIFICATION DATE	DELIVERY MODE			
02/01/2010	ELECTRONIC			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORETTA.SANDOVAL@EDWARDSVACUUM.COM

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,390	<b>Applicant(s)</b> SCHOFIELD ET AL.
	<b>Examiner</b> Nashmiya S. Fayyaz	<b>Art Unit</b> 2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 November 2009.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-4-28,32-34 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) 7-14,18-23,32-34 and 36-39 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4-6,15-17 and 24-28 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date: \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 4-6, 15, 17, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1416168-Frankl. As to claims 1 and 4, Frankl discloses a test apparatus and method which includes testing the component (governor) of a fuel pump 12 with a control rod 13 moved by the governor by generating a predetermined test conditions (increasing the pump speed from an initial low value to a high value followed immediately by a reversal so that the pump speed decreases to its low value again) and obtaining signals indicative of a condition (recording the relative variation of the voltage as the pump speed is varied), see page 1, lines 10 et seq. and figure. Further, it is noted that speed variation used during testing is not indicated as an "abnormal pump speed" or as causing a "reduction of clearance". However, to take the pump speed by increasing from an initial low value to a high value followed immediately by a reversal to a low speed is *not* considered **normal** operation of the pump. Further, speed variation is known to cause reduction of clearance being caused by the recited increase and decrease in rotational speed of the pump 12 via rotor 14 and shaft (stator) which interconnects with coupling 11 and fuel pump 12. Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have recognized that the spanning of the speeds from an upper speed to a lower speed with an immediate reversed span applied to the pump would by no means be referred to as normal operation, and therefore would have deemed the testing as subjecting the pump to an "abnormal pump speed" and due to the clearly indicated increased speed to an "upper ...speed" as a reduction in clearance of the parts since these conditions are not normal and result in a reduction in clearance. Further, it is also noted that Frankl does not specify "sustaining for a substantial period of time" or a "pump speed outside a range of normal pump operation speed". However, Frankl does indicate the pump speed being increased from an initial low value to a high value which is *then* "immediately followed by a reversal". Therefore, this would suggest that the increase from the low to high value is **not immediate** and is sustained for a "substantial time" in order to allow the X-Y recorder 17 to stabilize and plot the values (it is also noted that "a substantial time" is not defined in the claim). Further, as to the speed being outside the range of normal operation, it is noted that Frankl indicates these speeds as a "high" and "low" value which would clearly suggest that these speeds are not normal speeds and are therefore "outside the range of normal pump operation". As to claim 5, note converter 16 provides signals for selective control of the speed of the rotor 14 via adjustable coupling 11. As to claim 6, note that the test consists of the pump speed being increased from an initial low value to a high value inherently each for a

predetermined period of time, note page 1, lines 83-87. As to claim 15, recorder 17 works to store the signals. As to claim 17, the hysteresis loop is drawn as an analysis. As to claim 25, the recorder would inherently include a display. As to claim 26, it is indicated that the coupling automatically adjusts itself to reduce the speed if it is necessary, see page 2, lines 1-11.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankl in view of Gopalakrishnan et al-US Patent # 6,536,271. As to claim 16, Frankl lacks a teaching for transmitting the collected signals to a storage location via a LAN or internet. In a related prior art device, Gopalakrishnan et al disclose a device for monitoring a pump where the data sensed is sent via wireless technology via LAN, see col. 5, lines 19-38. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have recognized that the Frankl device could be modernized with the wireless technology of data transmission via LAN for transmission of the collected data for further analysis.

4. Claims 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankl in view of Sabini et al- US Patent # 6,648,606. As to claim 24, Frankl lacks a teaching of provision of an audible indication. In a related prior art device, Sabini et al also teach a pump performance degradation detection device where the output of the pump is monitored over a range of speeds and also suggests the usage of alarms in col. 5, lines 29-41. Therefore,

it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed an audible indication of the results of the measurement as embodied as an alarm given the teaching from Sabini et al of reducing false alarms. As to claims 27 and 28, Sabini also teaches usage of a special purpose processor for automatic determination of the pump which would be able to determine the condition of the pump and control determining at predetermined intervals which are both old and very well-known expediencies. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated a processor for automatic control of the device so as to minimize the need for any operator control.

5. Claims 1, 4-6, 17, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehm et al-(US Patent # 6,045,331). As to claim 1, Gehm et al disclose a fluid pump speed controller which includes a self calibration including generating a predetermined test condition (operating the pump 4 initially at its full/maximum speed) and sustaining (running "until the vacuum sensor..indicates that the vaccum level has stabilized" i.e. remains constant for 10 seconds) and obtaining signals indicative of a condition of the pump (the system then calculates the system vacuum level), see col. 4, lines 8 et seq. It is noted that Gehm et al lacks a teaching for "an abnormal pump speed" or a reduction of clearance of parts. However, it is indicated that the pump is initially run a "full speed", see col. 4, lines 15 et seq. Therefore, it would have been

obvious to one of ordinary skill in the art of pumps at the time of the invention to have recognized that operation at "full speed" is not normal operation for a pump and clearly would result in reduction of clearance between the parts since it is known that a pump is not designed to be run at full speed for normal operation and increased speed results in reduction of clearance of parts. As to claim 4, official notice is taken that inclusion of a rotor and a stator in a pump operated by a motor are old and well-known. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included a rotor and a stator in the pump disclosed by Gehm et al in order to operate the pump. As to claim 5, note fluid pump speed controller circuit card 1. As to claim 6, note col. 4, lines 15-32. As to claim 15, note microcontroller 10 which inherently is equipped to store signals via memory. As to claim 17, note that the signals are used for self calibration. As to claim 25, note visual indicator 20. As to claim 26, note col. 7, lines 31 et seq regarding automatically adjusting the speed.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gehm et al in view of Gopalakrishnan et al-US Patent # 6,536,271. As to claim 16, Gehm et al lacks a teaching for transmitting the collected signals to a storage location via a LAN or internet. In a related prior art device, Gopalakrishnan et al disclose a device for monitoring a pump where the data sensed is sent via wireless technology via LAN, see col. 5, lines 19-38. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have

recognized that the Gehm et al device could be modernized with the wireless technology of data transmission via LAN for transmission of the collected data for further analysis.

7. Claims 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehm et al in view of Sabini et al- US Patent # 6,648,606. As to claim 24, Gehm et al lack a teaching of provision of an audible indication. In a related prior art device, Sabini et al also teach a pump performance degradation detection device where the output of the pump is monitored over a range of speeds and also suggests the usage of alarms in col. 5, lines 29-41. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed an audible indication of the results of the measurement as embodied as an alarm given the teaching from Sabini et al of reducing false alarms. As to claims 27 and 28, Sabini also teaches usage of a special purpose processor for automatic determination of the pump which would be able to determine the condition of the pump and control determining at predetermined intervals which are both old and very well-known expediencies. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated a processor for automatic control of the device so as to minimize the need for any operator control.

***Response to Arguments***

8. Applicant's arguments filed 11/13/09 have been fully considered but they are not persuasive. Applicant has argued that Frankl does not teach an abnormal pump speed outside the range of a normal pump speed or generating and sustaining for a substantial period of time an abnormal speed but rather teaches an immediate reversal. Such arguments are not found persuasive because it is old and well known that the lowest/highest value of a speed range is not considered the normal speed of operation nor is the increase of the speed from the low value to a high value considered normal operation. Note that Applicant's own disclosure defines these abnormal speeds as just 10% above or below the normal speed, see page 4, last paragraph which would clearly result in a range about the normal speed-just as the Frankl reference indicates. Further, it is noted that the designation of "a substantial period of time" is not defined in the claims as any specific length of time. Also, Frankl's indication that the *reversal* immediately follows does not indicate that the high and low speeds are not maintained for a substantial time.

9. Applicant's arguments with respect to claims 1, 4-6, 15-17, and 24-28 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone number is 571-272-2192. The examiner can normally be reached on Tuesdays and Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. S. F./  
Examiner, Art Unit 2856

/Hezron Williams/  
Supervisory Patent Examiner, Art Unit 2856